ABSTRACT

Packets and packets fragments possibly received out of sequence are distributed into an expandable set of queues. For each particular packet or fragment, a queue within a set of queues is identified that does not contain a packet or packet fragment that is subsequent to the particular packet or fragment, and the particular packet or fragment is enqueued therein. If there is not such a queue available, a new queue is added to the set of queues. A data structure is typically updated for packet fragments to identify when all fragments have been received and the order of queues containing the packet fragments in order of their position within the reassembled packet. This ordered list of the queues is communicated to a reassembly mechanism to retrieve the packet fragments and to reassemble the packet. Resequencing of packets is similarly performed, and may be part of the reassembly process. The list of queues is not always used by the reassembly/resequencing mechanism as the enqueued fragments/packets typically contain sequence numbers.